

previously input when said stroke is determined to be part of a multiple stroke gesture.

18. A method of interpreting a gesture input onto a display screen associated with a pen-based computer system, the method comprising the steps of:

detecting a pointer-created stroke input by a user onto the computer screen;

processing the stroke for gesture recognition, the stroke processing step resulting in a series of line segments formed between adjacent points that define the stroke wherein said step of processing the stroke includes smoothing said stroke by reducing the number of points that define the stroke such that the points of the smoothed stroke are located at least a threshold distance apart from one another, said reducing including calculating a position for a new point that is positioned between two adjacent points in the stroke that are separated by less than the threshold distance, and replacing a plurality of points that are separated by less than the threshold distance with said new point;

normalizing said processed stroke by:

dividing each coordinate by a scaling factor; and storing scaled coordinates of selected points of the stroke to fit in at least one prototype buffer as a normalized stroke, said points being selected based on a size of said prototype buffer;

comparing the normalized stroke to a multiplicity of gesture prototypes, wherein a plurality of the gesture prototypes represent the same gesture; and

selecting a gesture associated with the gesture prototype that most closely resembles the normalized stroke.

19. A method as recited in claim 18 wherein the step of normalizing the stroke includes the substep of subtracting an offset value from each coordinate of the points of the processed stroke.

20. A method as recited in claim 18 wherein said gesture prototypes include standard gesture prototypes having standardized shapes and user-inputted gesture prototypes having been previously handwritten by a user.

21. A method as recited in claim 20 wherein a gesture is represented by a standard gesture prototype and a plurality of user-inputted gesture prototypes.

22. A method as cited in claim 18 further comprising a step of determining whether the processed stroke is correlated to the most closely resembled prototype by at least a predetermined threshold correlation, wherein the stroke is only interpreted as the selected gesture when the correlation exceeds the predetermined threshold.

23. A method as recited in claim 18 wherein horizontal coordinates of said selected points are stored in a first prototype buffer, and said vertical coordinates of said selected points are stored in a second prototype buffer.

24. A method as recited in claim 18 wherein said prototype buffer stores up to a predetermined number of coordinates, and wherein said selected points are distributed approximately along a full length of said stroke.

25. A method as recited in claim 24 wherein said selected points are selected approximately as every nth point of said stroke, wherein n is calculated as the number of points in said stroke divided by said predetermined number of coordinates in said prototype buffer.

26. A method as recited in claim 18 wherein the weight given to the location of a specific new point is proportional to the number of points that are replaced by the specific new point.

27. A method as recited in claim 18 wherein when said stroke is entered by said user within a predetermined distance of a previous stroke and within a predetermined time

of when said previous stroke was entered, said stroke and said previous stroke are together considered a multiple-stroke gesture.

28. A computer system comprising:

a central processing unit (CPU);

screen means coupled to said CPU;

pointer means coupled to said CPU to provide user inputs which can be displayed on said screen means;

processing means for smoothing a stroke entered by said pointer means on said screen means by reducing the number of a plurality of points that define the stroke such that the points of the smoothed stroke are located at least a threshold distance apart from one another, said reducing including calculating a position for a new point that is positioned between two adjacent points in the stroke which are separated by less than the threshold distance, and replacing a plurality of points that are separated by less than the threshold distance with said new point;

means for normalizing said smoothed stroke by dividing each coordinate by a scaling factor and storing coordinates of selected points of the stroke as the normalized stroke in at least one buffer of predetermined size;

means for determining whether said normalized stroke matches one of a plurality of gesture prototypes; and

means for selecting the gesture represented by a best matched gesture prototype as an interpretation of said stroke.

29. A computer system as recited in claim 28 wherein said pointer means is selected from the group comprising stylus, mouse, and trackball pointing devices.

30. A computer system as recited in claim 29 wherein said screen means and said pointer means are parts of a pen computer system.

31. A computer system as recited in claim 28 wherein said gesture prototypes include an open bracket gesture and a close bracket gesture operative to select an object displayed on said computer screen.

32. A computer system as recited in claim 31 wherein said gesture prototypes include a pigtail gesture operative to delete an object displayed on said computer screen.

33. A computer system as recited in claim 28 wherein said step of normalizing said smoothed stroke includes subtracting an offset value from each coordinate of each of said points.

34. A computer system as recited in claim 33 wherein horizontal coordinates of said selected points are stored in a first prototype buffer, and said vertical coordinates of said selected points are stored in a second prototype buffer.

35. A computer system as recited in claim 28 wherein said normalized stroke is compared to a standard gesture prototype having a standardized shape and said normalized stroke is compared to a plurality of user gesture prototypes previously handwritten by a user of said computer system.

36. A computer system as recited in claim 28 wherein the weight given to the location of a specific new point is proportional to the number of points that are replaced by the specific new point.

37. A computer system as recited in claim 28 wherein said selected points are selected based on said predetermined size of said at least one buffer.

38. A computer system as recited in claim 28 wherein when said stroke is entered by said user within a predetermined distance and within a predetermined time of a previous stroke, said stroke and said previous stroke are together considered a multiple-stroke gesture.